

A<sup>2</sup> (d) assembling the tube bundle with the assembly fixture.--

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#### BASIS FOR THE AMENDMENTS

Claim 1 has been limited to require a safety burst disk, particular catalysts and a particular insulation. Support is found in the specification at, e.g., page 10, lines 23-24, page 18, lines 4-7, and page 20, lines 11-20.

Claim 12 has been cancelled.

Claims 17 and 18 have been amended to depend from Claim 1.

No new matter is believed to be added by entry of the amendments. Upon entry of the amendments, Claims 1-11 and 13-18 will be active and in condition for allowance. Entry and favorable consideration are kindly requested.

#### REMARKS

Applicants wish to thank Examiner Leo for the courteous and helpful discussion held with their representative on December 19, 2002. The results of that discussion are summarized and expanded upon below.

The rejection over Courchesne is respectfully traversed in-part and is obviated in-part by amendment. Courchesne does not disclose or suggest the safety burst disk, the catalysts, or the cement-bound refractory insulation now required by the claims. Unlike the present invention, Courchesne is not a "reactor" having a catalyst and in which a chemical reaction takes place. Likewise, Courchesne does not describe a pressure housing such as claimed. Instead, Courchesne is merely an air-to-air heat exchanger having a plastic housing and assertedly rather fragile glass tubes. The insulating material is disclosed as thermoplastic closed cell foam (column 3, lines 19-21), and the tubes therein are thin walled glass having a

thickness on the order of fluorescent light tubes (column 4, lines 35-39). Accordingly, the claims are not anticipated by Courchesne and withdrawal of this ground of rejection is kindly requested.

The rejection of Claim 7 over Courchesne in view of Uggerby is respectfully traversed in-part and is obviated in-part by amendment. Uggerby is cited only for the proposition that it discloses a compliant sealing material, but it does not cure the deficiencies of Courchesne respecting the broadest claims. Accordingly, the claims are not obvious over the combination of Courchesne and Uggerby, and Applicants respectfully request that this rejection be withdrawn.

As was discussed during the interview, Applicants kindly request the Examiner to consider rejoining non-elected Claims 17 and 18 to the elected group in view of the allowability of the broadest claim within the elected group. The non-elected method claims incorporate all the limitations of Claim 1 by their dependence therefrom.

Applicants respectfully submit that this application is in immediate condition for allowance, and the Examiner is kindly requested to pass this case to issue.

Respectfully submitted,

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Amendment Filed Herewith

IN THE CLAIMS

--1. (Amended) A heat exchange reactor, comprising:

at least one tube bundle comprising a plurality of tubes arranged substantially parallel to a common longitudinal axis and within an external pressure housing, said bundle comprising first and second ends in respective first fluid communication with at least one first fluid inlet and at least one first fluid outlet, and said external pressure housing comprising at least one second fluid inlet and at least one second fluid outlet;

at least one baffle oriented substantially perpendicular to the longitudinal axis and disposed about said bundle and configured as a manifold to control a flow of said second fluid;

at least one layer of interior thermal cement-bound refractory insulation disposed between said bundle and said housing and in fluid communication with said second fluid; and

at least one safety burst disk within said housing, wherein  
each of said tubes comprises on the inside thereof at least one steam reformation catalyst and at least one water gas shift reaction catalyst.

12. (Cancelled).

17. (Amended) A method for making [a] the heat exchange reactor according to Claim 1, comprising:

- (a) preparing at least one tube bundle comprising the catalysts, a plurality of substantially parallel tubes and at least one baffle disposed about said bundle;
- (b) mating a portion of said baffle to at least one sealing groove in a layer of thermal insulation; and
- (c) contacting the insulation with [an] the external pressure housing.

18. (Amended) A method for making [a] the heat exchange reactor according to Claim 1, comprising:

- (a) fabricating [an outer] said housing;
- (b) contacting at least one layer of the thermal insulation with the [outer] housing;
- (c) mating a portion of at least one baffle to at least one sealing groove in the insulation to form an assembly fixture; and
- (d) assembling the tube bundle with the assembly fixture.--